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WORKING PAPER

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MEETING DOCUMENT

From:	Presidency
To:	Working Party on Competitiveness and Growth (Industry)
Subject:	CRMA – technical workshop – presentation from the Commission

Technical Workshops on the Critical Raw Materials Act

European Commission/Swedish Council Presidency

20 April 2023

CRMs and SRMs

Relevant articles

- **Article 2 (Definitions)**

  ‘raw material’ means a substance in processed or unprocessed state used as an input for the manufacturing of intermediate or final products, excluding substances predominantly used as food, feed or combustion fuel;

- **Article 3 + Annex I (strategic raw materials)**

  An updated list of strategic raw materials shall include, from among the raw materials assessed, the raw materials that score among the **highest in terms of strategic importance**, **forecasted demand growth** and **difficulty of increasing production**.

- **Article 4 + Annex II (critical raw materials)**

  An updated list of critical raw materials **shall include the strategic raw materials** listed in Annex I, Section 1 as well as any other raw material that reaches or **exceeds the thresholds** for both **economic importance** and **supply risk**

- **Review clause:**

  The Commission shall **review and, if necessary, update** the list of [critical/strategic] raw materials by [four years after the date of entry into force], and **every 4 four years** thereafter.

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Logic

Defining critical and strategic raw materials

CRM

Whole EU economy, based on :

- supply risk
- economic importance

SRM

SRM are a subset of CRM:

- Key for strategic technologies (green, digital, defence and space)
- Forecast demand risks outstripping supply
- Difficulty to scale up production

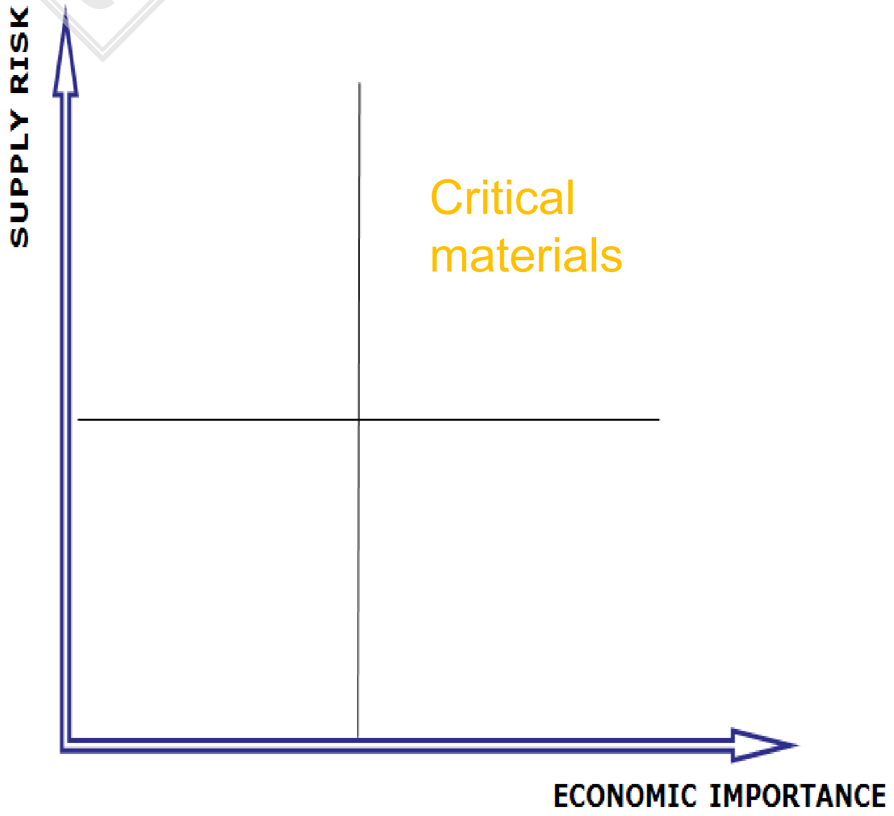
EU CRM methodology

Economic importance

- Importance of a raw material per economic sector
  & importance
  of the sector in the EU economy (value added)
- Substitution (technical and cost performance)

Supply risk

- Global supply and EU sourcing (extraction/processing)
- Market concentration (HHI)
- Governance performance (WGI)
- Import reliance
- Trade agreements and restrictions
- End-of-Life Recycling Input Rate
- Substitution (production, criticality, co/by-production)



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https://op.europa.eu/en/publication-detail/-/publication/2d43b7e2-66ac-11e7-b2f2-01aa75ed71a1

2023 Critical Raw Materials

including Strategic Raw Materials (in *italics*)			
Aluminium/Bauxite	Coking Coal	*Lithium*	Phosphorus
Antimony	Feldspar	*Light Rare Earth Elements*	Scandium
Arsenic	Fluorspar	*Magnesium*	*Silicon Metal*
Baryte	*Gallium*	*Manganese*	Strontium
Beryllium	*Germanium*	*Natural Graphite*	Tantalum
Bismuth	Hafnium	Niobium	*Titanium Metal*
Boron	Helium	*Platinum Group Metals*	*Tungsten*
Cobalt	*Heavy Rare Earth Elements*	Phosphate Rock	Vanadium
		Copper	*Nickel*

Criteria for Strategic Raw Materials

- Strategic importance, based on the **highest relevance of a raw material for the green and digital transition, defence and space applications**:
  - number of strategic technologies using a raw material as an input;
  - amount of a raw material needed for manufacturing relevant strategic technologies;
  - the expected global demand for relevant strategic technologies.
- Forecasted demand growth (2030 demand forecast vs. global annual production)
- Difficulty of increasing production
  - current production scale
  - reserves-production ratio

High relevance of SRM for strategic technologies

Bismuth								●
Boron - metallurgy grade				●	●	●	●	●
Cobalt	●						●	●
Copper	●	●	●	●	●	●	●	●
Gallium						●	●	●
Germanium						●	●	●
Lithium - battery grade	●						●	●
Magnesium metal								●
Manganese - battery grade	●						●	●
Natural Graphite - battery grade	●						●	●
Nickel - battery grade	●						●	●
Platinum Group Metals		●	●					
Magnet REE*				●	●			●
Silicon metal						●	●	●
Titanium metal								●
Tungsten								●

*(Nd, Pr, Tb, Dy, Gd, Sm, Ce)

Benchmarks

Legal text

This Regulation aims to

(a) strengthen the different stages of the **strategic** raw materials value chain with a view to ensure that, **by 2030**, Union capacities *for each* strategic raw material have significantly increased so that, *overall*, Union capacity approaches or reaches the following benchmarks:

(i) Union **extraction** capacity is able to extract the ores, minerals or concentrates needed to produce at least **10%** of the Union's annual consumption of strategic raw materials, *to the extent that the Union's reserves allow for this*;

(ii) Union **processing** capacity, including for all intermediate processing steps, is able to produce at least **40%** of the Union's annual consumption of strategic raw materials;

(iii) Union **recycling** capacity, including for all intermediate recycling steps, is able to produce at least **15%** of the Union's annual consumption of strategic raw materials.

(b) diversify the Union's imports of strategic raw materials with a view to ensure that, by 2030, the Union's annual consumption of **each strategic raw material at any relevant stage of processing** can rely on imports from several third countries, none of which provide more than **65%** of the Union's annual consumption;

Concept

- 2 types of benchmarks
  - Capacity: Securing a **minimum foothold** in the production of "each" SRM, along the whole value chain
  - Diversification: Defining a **maximum level of dependence** on a single third country that is acceptable

- Levels are based on where we stand currently and how ambitious we want to be (less on extraction, more on processing and recycling)

- **No automaticity:** Binding on the EU but not on economic actors or Member States – review of measures in case of underachievement

  "Where, based on the report referred to in Article 42, the Commission concludes that the Union is likely not to achieve the objectives set out in paragraph 2, it shall **assess the feasibility and proportionality of proposing measures** or exercising its powers at Union level in order to ensure the achievement of those objectives. "

Benchmark overview

2030 benchmarks

Towards more SRM supply security

- EU's **extraction** capacity cover at least **10%** of the EU's SRM consumption
- EU's **processing** capacity cover at least **40%** of the EU's SRM consumption
- EU's **recycling** capacity cover at least **15%** of the EU's SRM consumption

Towards more diversification of supply

- Not more than **65%** of EU consumption of each SRM should come from a single third country.

Where do we stand today?

SRM	EU sourcing (t) processed stage	EU Extraction satisfies:	EU processing satisfies:	EU processing at specified grade satisfies:	End-of-Life Recycling Input Rate	Biggest EU supplier
Bismuth	3 858	-	26%	-	0%	65% China
Boron - metallurgy grade	76 361	0%	29%	N/A	1%	*99% Türkiye*
Cobalt	22 148	8%	92%	-	22%	*63% DRC**
Copper	3 234 239	25%	72%	-	55%	*19% Poland*
Gallium	33	-	0%	-	0%	69% China
Germanium	14	-	50%	-	2%	45% China
Lithium - battery grade	1 832	8%	0%	0%	0%	79% Chile
Magnesium metal	127 631	-	0%	0%	13%	97% China
Manganese - battery grade	956 798	1%	31%	0%	9%	*41% South Africa*
Natural Graphite - battery grade	76 801	1%	~0%	~0%	3%	*40% China*
Nickel - battery grade	300 212	16%	23%	7%	16%	29% Russia
Platinum Group Metals	95	-	1%	-	12%	94% South Africa, Pd 40% Russia
Magnet REE*	34	0%	0%	0%	1%	LREE 85%; HREE 100% China
Silicon metal	417 941	-	34%	-	1%	33% Norway
Titanium metal	4 136	0%	0%	0%	0%	37% Kazakhstan
Tungsten	10 481	20%	19%	-	42%	31% China
Benchmark		10%	40%		15%	65%

*(Nd, Pr, Tb, Dy, Gd, Sm, Ce); Dependence at extraction stage in italic. Overview of both stages in:
European Commission, Study on the Critical Raw Materials for the EU 2023 – Final Report

2030 Outlook for selected technologies

SRM	2030 EU Demand Growth (times)	2030 Global Demand Growth (times)	2050 EU Demand Growth (times)	2050 Global Demand Growth (times)
Bismuth	1.2	1.2	-	-
Boron - metallurgy grade	2.1	2.0	1.5	3.2
Cobalt	6	9	5	18
Copper	6	4	10	12
Gallium	2	2	17	26
Germanium	2	2	-	-
Lithium - battery grade	12	18	21	89
Magnesium metal	1.2	1.2	-	-
Manganese - battery grade	4.5	3	4.5	6
Natural Graphite - battery grade	14	21	26	110
Nickel - battery grade	10	10	16	45
Platinum Group Metals	30	15	200	89
Magnet REE*	5-6	4-5	6-7	11-13
Silicon metal	1.8	2.1	1.3	2.4
Titanium metal	1.4	1.4	-	-
Tungsten	1.2	1.2	-	-

Increase compared to 2020 EU Demand and 2020 Global Demand respectively under the High Demand Scenario, Technologies: Batteries, Traction motors, Windpower, PV, Electrolysers, Fuel Cells, ICT. Bismuth, Tungsten, Titanium metal, Magnesium only considered for ICT, data for 2050 unavailable.
Source: 2023 EC Raw Materials Foresight Study

Strategic Projects

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Role of Strategic Projects

- Core instrument of the proposal to achieve the capacity and diversification benchmarks
- Only for SRMs (incl. as by-product)
- Received application needs to be screened and status granted(no automatic benefits)
- Can be both projects in the Union and in third countries
- When recognised, SPs enjoy streamlined permitting (not for 3rd country projects) and coordination of public support and inclusion in off-take mechanism
    - More detailed presentation of benefits will follow separately

Strategic Projects

- COM invites application from all projects meeting the criteria
- There is evidence that there would be potentially eligible projects --> COM collects info on projects e.g. as part of ERMA pipeline
- For third country projects --> examples could include the projects from Strategic Partnerships

Criteria (Article 5)

1. **Meaningful contribution** to EU security of supply for SRMs
2. **Technically feasibility**
3. **Sustainability**, in particular as regards:
   - the monitoring, prevention and minimisation of **environmental** impacts,
   - the use of **socially** responsible practices including respect of human and labour rights, quality jobs potential and meaningful engagement with local communities and relevant social partners,
   - and the use of **transparent** business practices with adequate compliance policies to prevent and minimise risks of adverse impacts on the proper functioning of public administration, including corruption and bribery;
4. **Cross-border benefits**, including for downstream sectors (for projects in the EU)/ **Added value** in the third country concerned (for projects outside the EU)

➢ The fulfilment of the recognition criteria shall be assessed by the Commission in accordance with the elements and evidence set out in Annex III.

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Annex III

Provides how the fulfilment of the criteria will be assessed and what evidence will be considered in that assessment

- **Meaningful contribution** to EU security of supply for SRMs:
  - Assessed based on contribution to benchmarks or maintaining of existing capacity
  - Contribution assessed based on business plan, time-to-market and supporting technical info in application
- **Technically feasibility:**
  - Assessed based on feasibility studies, if technology already used that would be viewed positively
- **Sustainability**:
  - General sustainability criteria concretised by requirements and definitions laid down in existing EU legislation and international instruments, e.g. OECD guidance on Responsible Business Conduct can be used by an applicant to show how they will ensure transparent practices
  - As an alternative, applicants can obtain certification or commit to obtain certification from a recognised certification scheme covering all relevant aspects (see Article 29)

Annex III

- **Cross-border benefits** (for projects in the EU):
  - Amount and variety of companies involved
  - Amount and variety of potential off-takers
  - Benefits for downstream users in different Member States

- **Added value** in the country concerned (for projects outside the EU):
  - It will be positively considered if a project supports:
    - More than one value chain stage in the third country or its region
    - Fosters investment in the value chain
    - Creates wider economic or social benefits, including employment

Process (Article 6)

1. Application by the project promoter
2. Opinion by the Board
3. Veto possibility for the MS or third country concerned
4. Decision by the Commission

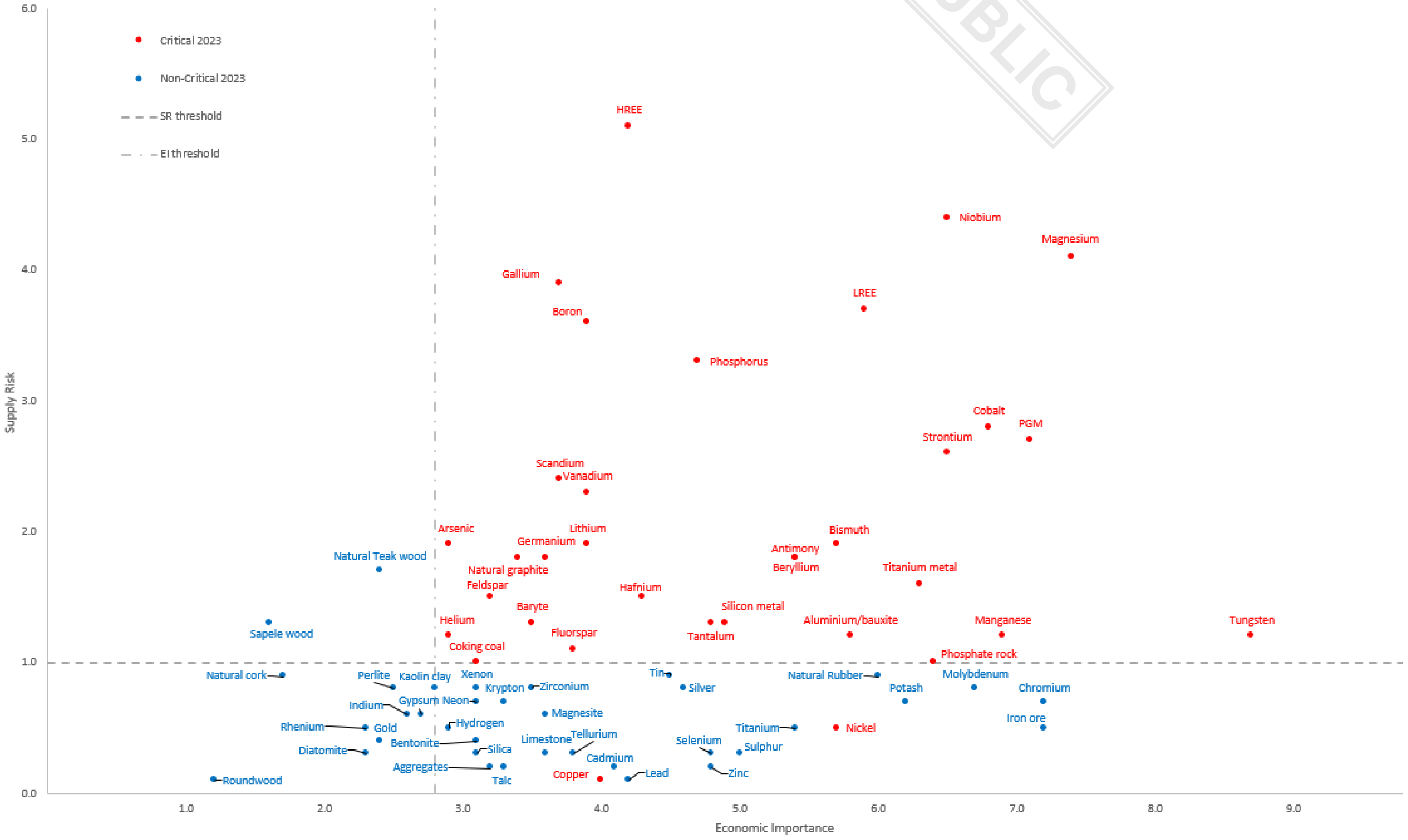
--> Possibility for the Commission to prioritise processing of applications to ensure balanced representation across the value chain or to ensure progress is made for all benchmarks

Implementation (Article 7)

- After approval: Biannual progress reports by the project promoter
- Possibility for the Commission to withdraw the SP status where a project no longer fulfils the criteria
- Board to discuss progress in implementation of SPs and provide recommendation to speed up progress where needed
- Project website with relevant environmental, social and economic benefits

Backup

CRM assessment results



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ECONOMIC IMPORTANCE (*EI*)

$$EI = \sum_s (A_s * Q_s) * SI_{EI}$$

A - Share of end use of a raw material in a NACE Rev. 2 2-digit level sector allocated via 6-digit level CPA

Q - Sector's Value added at the NACE Rev. 2 (2-digit level);

SI - Substitution index of a RM related to economic importance

EI is scaled to 0-10 by dividing Σ by largest manufacturing sector VA times 10

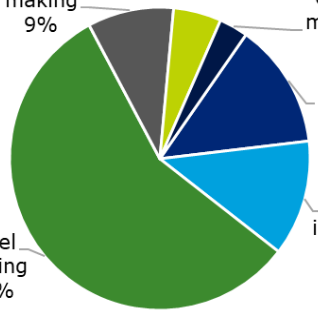
-Black → already in 2011-2014

-Red → introduced

-Blue → improved

Magnesite

EI (scaled)	**3.2**
EI (unscaled)	**62,706**



EU consumption: 1,160 kt (MgO content)

Applications	2-digit NACE-2 sector	Value added (millions €)
Agriculture	C20 - Manufacture of chemicals and chemical products	105,514
Agriculture	C10 - Manufacture of food products	155,880
Paper industry	C17 - Manufacture of paper and paper products	38,910
Steel making	C24 - Manufacture of basic metals	55,426
Cement making	C23 - Manufacture of other non-metallic mineral products	57,255
Ceramics	C23 - Manufacture of other non-metallic mineral products	57,255
Glass making	C23 - Manufacture of other non-metallic mineral products	57,255

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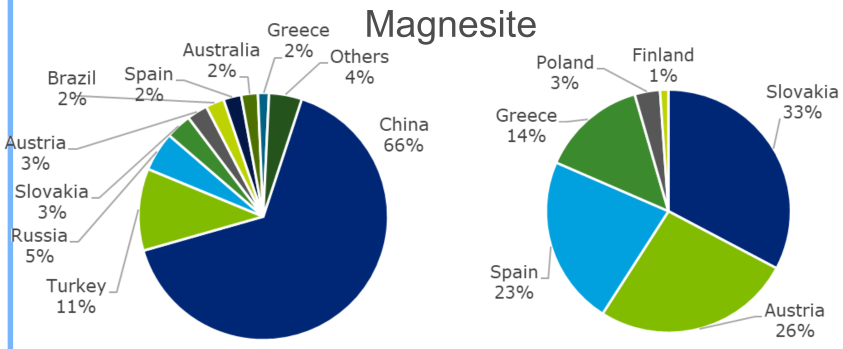
SUPPLY RISK

$$SR = \left[\left(HHI_{WGI,t}\right)_{GS} \cdot \frac{IR}{2} + \left(HHI_{WGI,t}\right)_{EUsourcing} \left(1 - \frac{IR}{2}\right) \right] \cdot \left(1 - EoL_{RIR}\right) \cdot SI_{SR}$$



Global production : 11.3 Mt of MgO

EU sourcing: 1,160 kt (MgO content)

Global Supply and EUsourcing

Extraction and Refining

HHI - country concentration

WGI- Worldwide Governance Indicators

t = trade parameter

IR = Import Reliance

Recycling

Substitution

- *Black → already in 2011-2014*
- *Red → introduced*
- *Blue → improved*

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